

ECON 301, Professor Hogendorn, Spring 2015

Final Exam Take-Home Mathematica Project

Total of 3 5-point questions (1/3 of total grade on the final).

Start by choosing any one of the Mathematica handouts from class. Look it over and make sure you understand it. Then do the following:

1. Write down the agents in the model and what problem each agent solves. What is the solution function for each agent? What is the equilibrium concept that will be applied to find a fixed point of the model? (To write the answer to this question you can use the text features of Mathematica, a word processor, or write it by hand.)
2. Reproduce the Mathematica notebook. You should make some small changes to the numbers so that the answer is not exactly the same as in class. Annotate your notebook with section and text cells so it is clear what it does. (Remember that simply copying and pasting from the class notebooks won't always work because in many cases Mathematica's answers need to be examined to eliminate conditions or negative or imaginary numbers.)
3. Make one interesting change to the model and compare the new results to the original ones. Explain the economic intuition for why the results change. Interesting changes include monopoly versus Cournot versus perfect competition, creating two types of consumers (e.g. high/low income) or firms (e.g. high/low cost), adding a tax or externality, or long run versus short run. Be creative!

Please turn in a print-out of the above at the sit-down final.